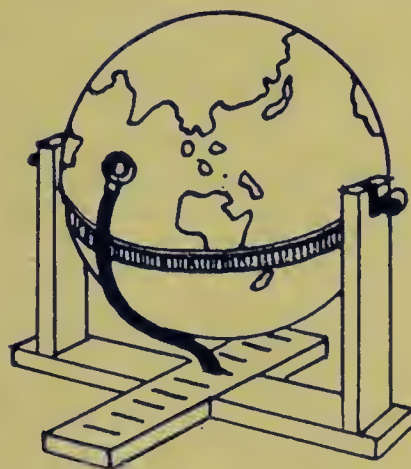


BRAILLÉ MAPS

AND HOW TO MAKE THEM

By — R. F. TUNLEY



“Inasmuch as ye have done it unto the least of these. . . .”

INTRODUCTION.



Inestimable is the boon of eyesight. Our eyes, those windows of the mind which mirror for us the pictures that Nature has painted and enable us to look upon the faces of those we love, are the most cherished possession of human personality . . .

The ability to see is so much taken for granted by the average person that it is difficult, if not actually impossible, for anyone who is not blind, to understand the fearful handicap under which blind children suffer. Shut your eyes for a few moments and try to put yourself in the position of a blind child. The sense of touch has to do duty for your eyes. You literally must see through the tips of your fingers. The only way in which your mind can receive impressions of external objects is by putting forth your hand and exploring the surface with your fingers. The blind child learns of the presence of such objects as chairs and tables by feeling for them. Hearing and the sense of touch of the blind become highly developed, but, while they can understand something of the nature of small objects by the sense of touch, how is it possible for them to imagine what a train, a tram, a ship, an animal, or a big shop is like? If you were blind, how could you convey to your mind the mental visualisation of say, the architecture of the City Hall, or picture what a cow or a horse looked like; or any one of a thousand other objects or creatures in the world of vision upon which your eyes had never looked?

The blind can only learn of these things by small scale models, and it is with the object of aiding blind children to "see" as well as they can with the sense of touch that we have made models of shops, houses, and other animate and inanimate objects as described in these pages.

If by means of these models, we can help partially to overcome the terrible handicap of blindness, and make it easier for the blind child to develop the mental sight necessary for the assimilation of knowledge, our efforts will be well rewarded.



RATION BOARD.

MAPS AND MODELS

*Which can be made by anyone,
from simple, inexpensive, every-
day things.*

Published by

**The Queensland Braille Map
and Model Club**

(R. F. TUNLEY, Hon. Org.)

103 WICKHAM ST., BRISBANE
QUEENSLAND, AUSTRALIA.

The book is being sent gratis to every School for the Blind in the world. Additional copies may be had for 1/- from the Publishers, or—

National Institute for the Blind, 224-6-8 Portland Street, London, W.1.

and

The New York Institute for the Education of the Blind, 999 Pelham Parkway, New York, N.Y.

INTRODUCTION



Inestimable is the boon of eyesight. Our eyes, those windows of the soul, enable us to see the pictures that Nature has painted and enable us to look upon the faces of the most cherished possession of human personality . . .

The ability to see is so much taken for granted by the average person that it is actually impossible, for anyone who is not blind, to understand the fearful handicap which blind children suffer. Shut your eyes for a few moments and try to put yourself in the place of a blind child. The sense of touch has to do duty for your eyes. You literally must feel with your fingers. The only way in which your mind can receive impressions of existing things is by touching them with your hand and exploring the surface with your fingers. The blind child learns to know the shape of such objects as chairs and tables by feeling for them. Hearing and the sense of smell become highly developed, but, while they can understand something of the meaning of things by the sense of touch, how is it possible for them to imagine what a train, a city, or a big shop is like? If you were blind, how could you convey to your mind the meaning of the architecture of the City Hall, or picture what a cow or a horse looks like? How could you know of the thousand other objects or creatures in the world of vision upon which your eyesight is so much taken for granted?

The blind can only learn of these things by small scale models, and it is the duty of the American Foundation for the Blind to give blind children to "see" as well as they can with the sense of touch that they have. They learn of shops, houses, and other animate and inanimate objects as described in these models.

If by means of these models, we can help partially to overcome the handicap of blindness, and make it easier for the blind child to develop the mental sight necessary for the assimilation of knowledge, our efforts will be well rewarded.



AMERICAN FOUNDATION
FOR THE BLIND INC.



DEMONSTRATION BOARD.

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103 WICKHAM ST., BRISBANE
QUEENSLAND, AUSTRALIA.

TO MAKE A HOLLOW GLOBE.

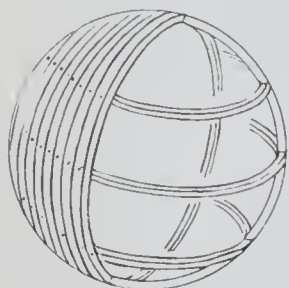


Fig. 1

To make one of these Globes first have a skeleton frame made and after nailing on thin venetian blind slats glue on strips of calico or duck. (Fig. 1)

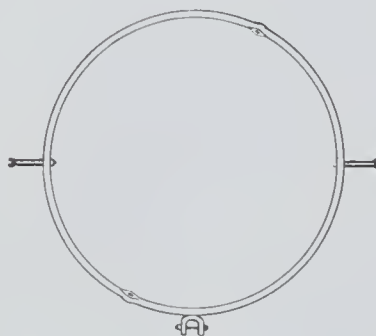


Fig. 2

A hoop is then made to surround the sphere giving about $\frac{3}{8}$ inch clearance all round. To have a lug each side for sphere to rest in uprights of frame, with holes top and bottom for the bearings, and a lug at the bottom the tilting device. (Fig. 2)



Fig. 3

Lugs are then fixed on top and bottom as shown. Ball bearings would be an advantage, but are not absolutely necessary. (Fig. 3)

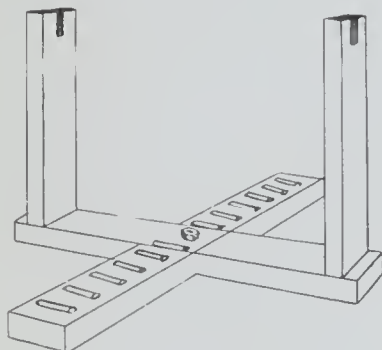


Fig. 4

A wooden frame is now made with 6in. x 2in. softwood for a base, and 3in. x 2in. uprights. This should have small pieces of 1 x $\frac{1}{2}$ nailed across the bottom piece as shown (Fig. 4)

There is nothing really difficult in making a globe like this. A carpenter friend will make the sphere for you. Any school teacher can draw the maps. Your local leather worker would be delighted to stick on the countries—and the blind children will get a thrill out of punching the tabs on the aluminium with the Braille-ette.

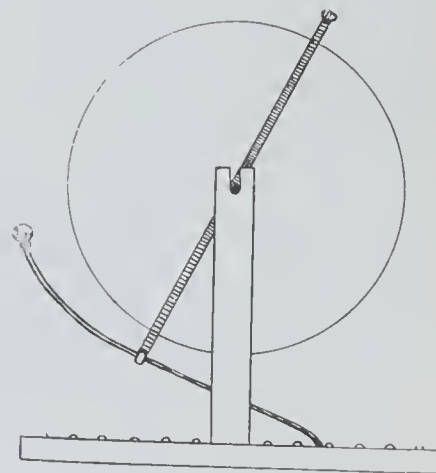


Fig. 5

The tilting is effected by a piece of 1in. x $\frac{1}{2}$ in. iron fixed to the bottom lug with its lower end resting against one of the pieces of wood. This arrangement makes it possible to turn up the far Southern places to read the Braille (Fig. 5)

3ft. HOLLOW GLOBE.

(DESCRIBED ON OPPOSITE PAGE)



Globe was presented to Brisbane School for the Blind about 14 years ago. Re-built and re-Brailled for the School in 1939.

HOW TO MAKE A HOLLOW GLOBE (Continued)—

Having made the sphere, hoop and stand, proceed as follows:— The continents and principal islands should now be marked roughly on the sphere. Leather should then be glued on to the marked places by a leather worker, and after the maps have been drawn in detail all the surplus leather cut away. The land portions are given a coat of white paint. The oceans should be painted over with a texture paint as used for making wall boards and stippled.

The details of Brailling will be found on Page 1.

W.A. INSTITUTE AND INDUSTRIAL SCHOOL FOR THE BLIND.—
"The map is, undoubtedly, the most useful Braille we have ever come in contact with and will be of tremendous benefit to our pupils."



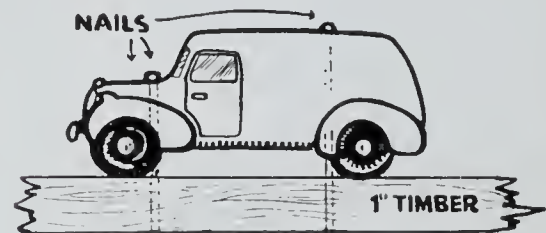
TOYS.



These toys were purchased by the Committee, Queensland School for the Blind, and mounted and Brailled by us, gratis.

In our opinion a most useful adjunct to any School for the blind is a full set of Tootsie, Dinkie, or similar toys permanently mounted on strips of 3 x 1. In this illustration will be seen some of the toys, of which there are about 50, comprising all sorts of cars, trucks, steam rollers, tractors, racing cars, covered waggon, aeroplanes, passenger and goods trains, and animals. All the articles are permanently labelled with aluminium tabs.

Mounted on long pieces of wood which are screwed down to a shelf they form a permanent object lesson, and their value will be obvious to all. All articles should face one way.



Holes may easily be bored through the toys and by using stout nails instead of screws the toys cannot be removed.

THESE TOYS ARE VERY INEXPENSIVE
AND ARE A WONDERFUL HELP TO
THE BLIND CHILDREN

MODELS OF BRIDGES, BUILDINGS AND SHIPS ALWAYS INTEREST AND HELP THE CHILDREN.

These models are simply constructed from scraps of aluminium, moulding, etc. Penholders make quite good fluted columns.

Presented to Queensland School for the Blind.

LONDON
TOWER
BRIDGE



BRISBANE CITY HALL



The Ship "Santa Maria," in which Columbus sailed to America.

SCHOOL FOR THE BLIND, SYDNEY.—"The map has been put up in one of the play rooms, where the children can examine it as often as they like. Many of them have already found their own home towns, and were quite thrilled at being able to do so."

MAP OF THE WORLD.



CLOSE-UP VIEW
OF MOVABLE
ALPHABET STICK



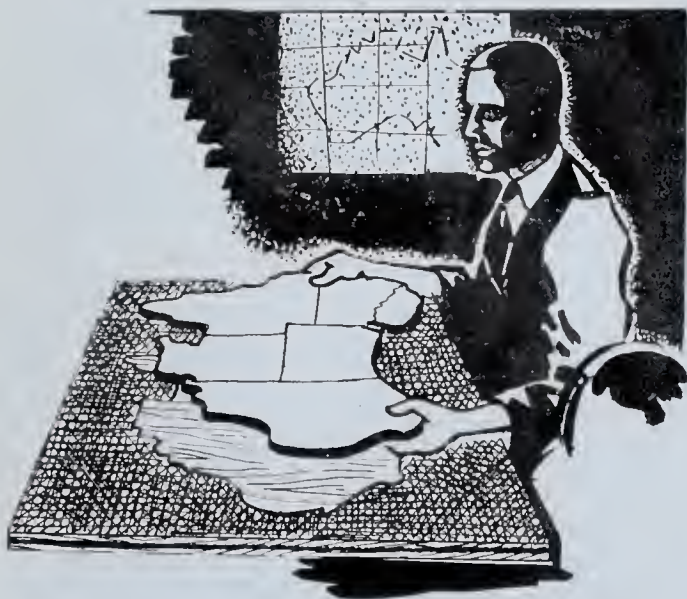
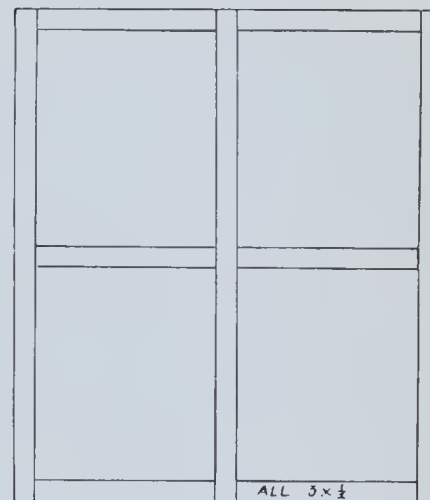
This map of the world shows shipping routes, islands, depths of the ocean, international date line, etc. The index below is on aluminium and each tablet is hinged at the top. The blind lift the tablets and lean against them whilst they read the Braille (H. E. C. Robinson, Ltd., Sydney, Map 1300).

Made for Queensland Musical, Literary and Self-Aid Society for the Blind.

TO MAKE WALL MAPS.

No skill is required to make these maps—anybody can make them. Try it yourself by following these simple directions.

Two maps will be required. One of them should be pasted on to a piece of 3-ply wood which has been nailed to a frame like this.



The second map is now pasted on to another piece of 3-ply and after cutting out the coast line with a fret saw (very easy work) is placed on Map No. 1 and glued and nailed down. The coast line edges should be painted.

PASTE.—Use paper hanger's paste, which is easily made by mixing the specially prepared powder with cold water (procurable at any paint shop).

VARNISHING.—The map is now given a coat of ordinary starch (mixed with a little cold water and afterwards boiling water poured on as for laundry work) and when dry varnish all over with Crystal Paper Varnish.

RIVERS.—May be indicated by punching holes along them with a centre punch.

It is best to use paper maps procurable from map makers and not try to mount the stiff linen ones.



This picture shows the Joy Wheel in its out-of-doors pavilion.

JOY WHEEL.

Made from cart wheel with jutting out arms on which a seat is fixed, and rail for holding on to. A ball-bearing thrust washer takes the weight. This one has been in constant use at the Queensland School for the blind for about 15 years and is as good as ever. Very easy to construct.

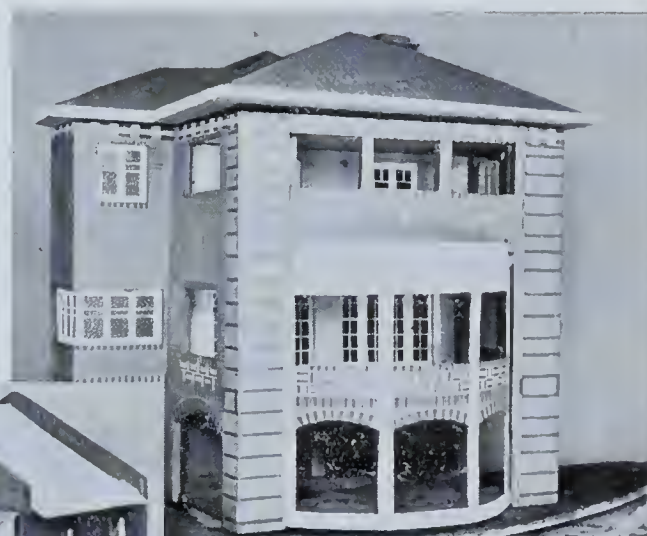
We know of nothing that has given the children of the Brisbane Schools for the Deaf and Blind greater pleasure.



TYPES OF HOUSES.



SPANISH



GEORGIAN



PIONEER



MODERN

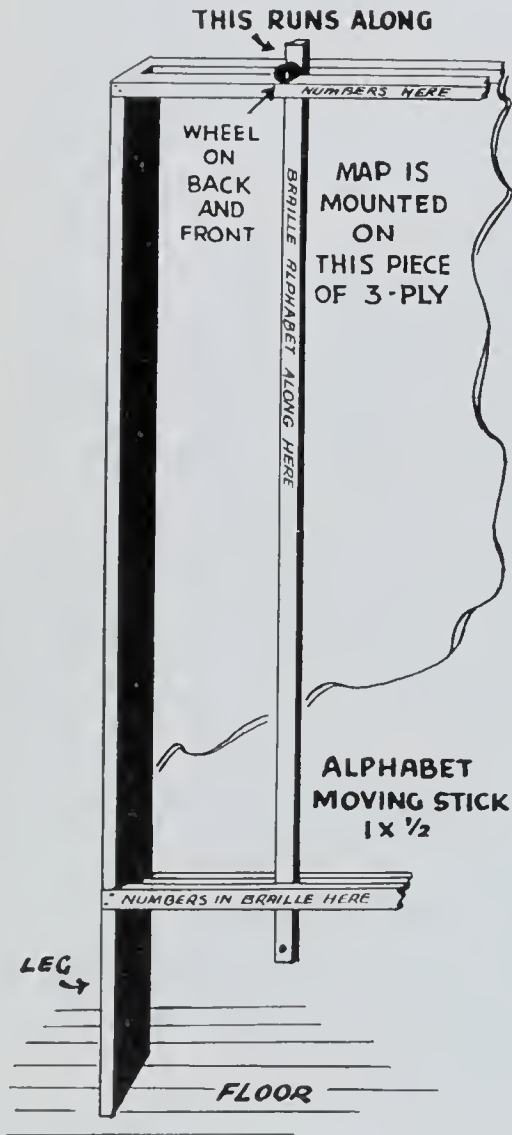


TUDOR

These models are 18 inches high and are designed to show various types of dwellings. They are constructed from 3-ply wood, with aluminium cut out windows and doors, and painted wall paper roofs.

Presented to Queensland School for the Blind.

THE PLACE FINDER.



No wall map is complete without a place-finder and index. The world map shown in this book has about 1,000 names Brailled on and anybody can find any of them by turning up the index. Each name has after it a letter and a number, the use for which will now be described:—

Across the top and bottom is fixed a strip of aluminium with numbers from 1 upwards, as shown in this illustration. Also one or two alphabet sticks are provided which slide backwards and forwards.

You find the place in the index—Honolulu, for instance, may be 35M. Run your finger along the top (if you are tall), or along the bottom if not, till you find 35—move the stick along to it, run your finger down to M, and there you have it.

SYDNEY INDUSTRIAL BLIND INSTITUTION.—“I have seen your very nice map of Europe and wish to say it is much appreciated by the blind, I have seen their fingers wandering over it.”

VICTORIAN ASSOCIATION OF BRAILLE WRITERS.—“I am sure our blind members will appreciate very much your kindly thought in donating such a gift to our library.”

TASMANIA.—“The map is really a work of art. Our head teacher, himself blind, is delighted with the map which he describes as the best of its type he has ever “seen.”

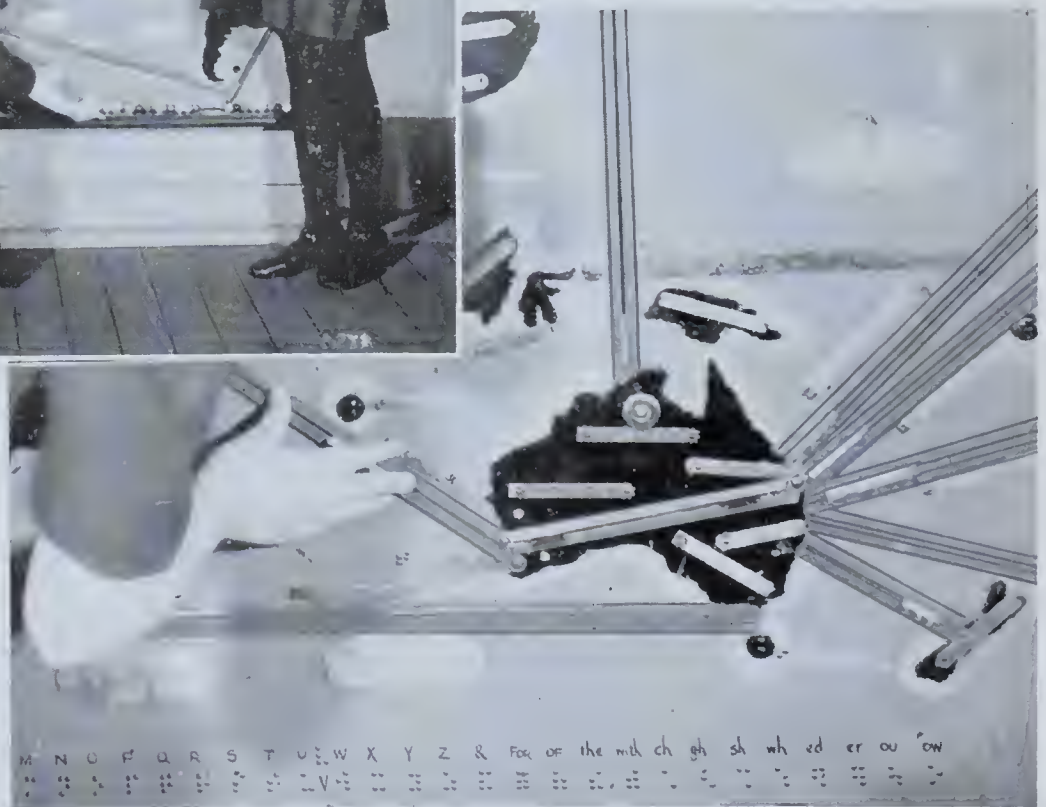
KINDERGARTEN BRAILLE MAP.



Braille map of the world for the smaller children. It is really a toy and amuses the children, who get some idea of geography whilst playing.

The little ships run in grooves and the map is not overburdened with Braille, only Continents and a few islands having tabs.

The map was presented to the Queensland School for the Blind by Capt. E. R. B. Pike, and decorated and Brailled by R. F. Tunley.



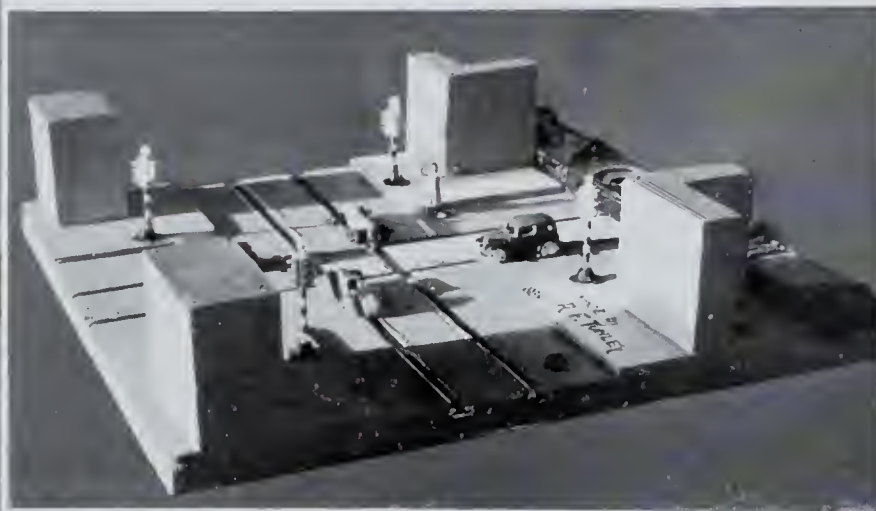
MODEL OF BUILDING.



Model of Club Building of The Musical, Literary and Self-Aid Society for the Blind, South Brisbane, showing ground and floor plans and elevation (all Brailled). Made to scale from architect's plans.

All Schools and Institutions should have a model of their building.

TRAFFIC LIGHTS.



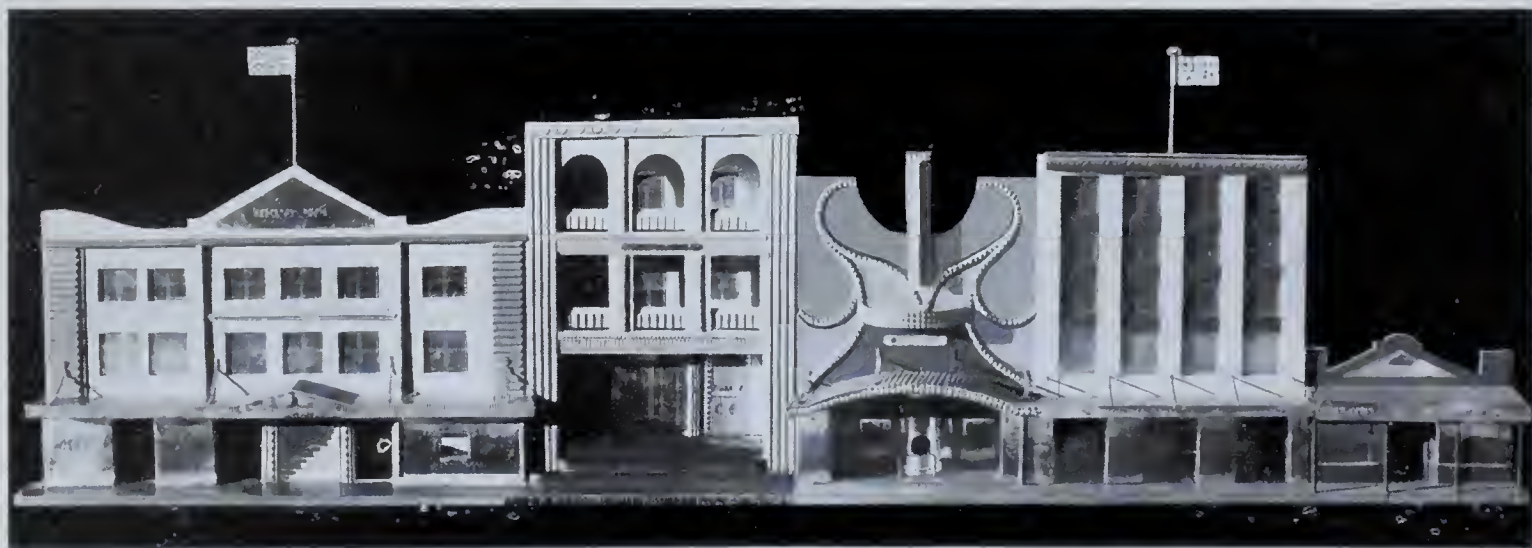
MINIATURE TRAFFIC LIGHTS. The little cars slide in Kirch rods. The blocks at the corners represent shops and protect everything in case the apparatus falls to the floor. On the offside is a slide arrangement indicating the coloured lights. Size about 2ft. square.

Presented to Queensland School for the Blind.

NATIONAL INSTITUTE FOR THE BLIND, LONDON, October, 1937.—An expert reports: "Your process is identical with the methods used for some years in his school, except that he has not used the metal name plates. He is of the opinion that the metal name plates are definitely preferable to paper name plates such as are used by him."

MODELS OF BUILDINGS.

These models are useful to give blind children some idea of various types of buildings. They are made by nailing a piece of aluminium on to a sheet of 3-ply and then building up on top of the aluminium, the metal being scratched to indicate windows. All the openings for doors and windows are marked on the 3-ply and chopped out with a sharp chisel on a hard block (end grain). Chisel out the centres of the openings first, and then on the lines. It only takes a few minutes to cut out all the windows and doors.



Presented to Queensland School for the Blind.

SCHOOL FOR THE DEAF AND BLIND, Brisbane.—"The educational value of the many ingenious types of material you have constructed is incalculable and will do much to enable us to widen our pupils' general knowledge of the world they live in."

POPULAR SCIENCE MONTHLY, July, 1937.—"We are using two of the photos of your maps."

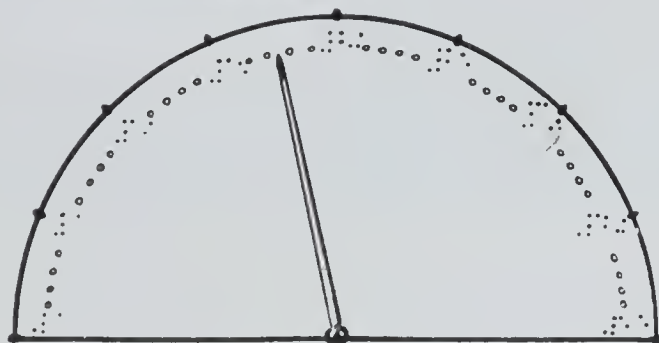
SELF-AID SOCIETY FOR THE BLIND, Brisbane.—"So many of our friends and members find the map of the world interesting and useful."

TASMANIAN INSTITUTION FOR THE BLIND, DEAF AND DUMB.—"The map of Tasmania has arrived and to say we are delighted with it is to express appreciation very mildly; it attracted widespread interest at our exhibit at the Launceston Show."

FURTHER USES OF ALUMINIUM.

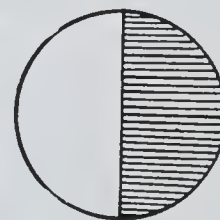
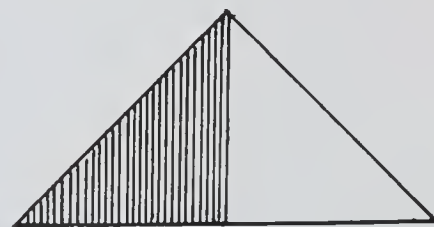


This dummy clock is to teach blind children the time. It is made by punching the Braille dots in the bottom of a tin or aluminium cake tin and turning it upside down on a piece of 3-ply wood. The hands can be cut out of a bit of brass or meccano. Hands can be fixed on with a small bolt and nut. A small coil spring on the bolt at the back will keep the hands taut.



RADIO DIALS. To enable the blind to find stations on their sets, an aluminium and numbered dial is placed behind the pointer. The glass front is, of course, removed.

OBJECT LESSONS. Collections of Nuts, hollowed out and filled with plastic wood make a useful and attractive addition to the school. They are mounted on a board and labelled with metal tabs. Those we have made show—cocoanut, walnut, almond, peanut, Chinese, Brazil, Barcelona, Bunya, Queensland, chestnut and Pecan nuts.



GEOMETRICAL DESIGNS of all shapes and sizes may be made by using plain and fluted aluminium and mounting on 3-ply.



ONE WHOLE

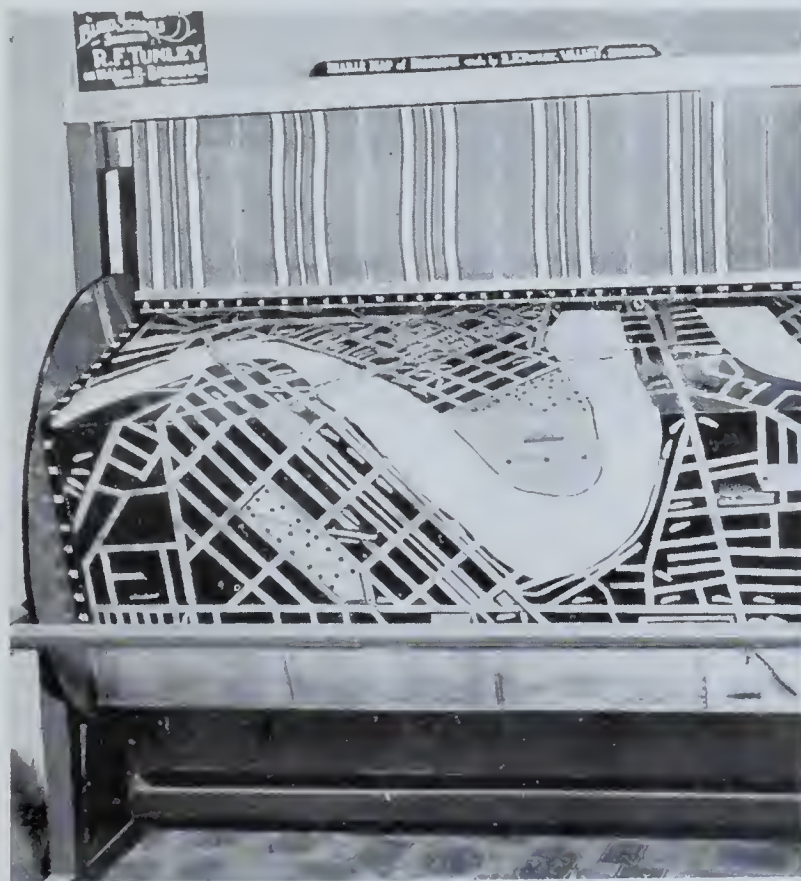


ONE WHOLE

FRACTIONS. Made by cutting up strips of aluminium and Braille on as shown, making the teaching of fractions easy.

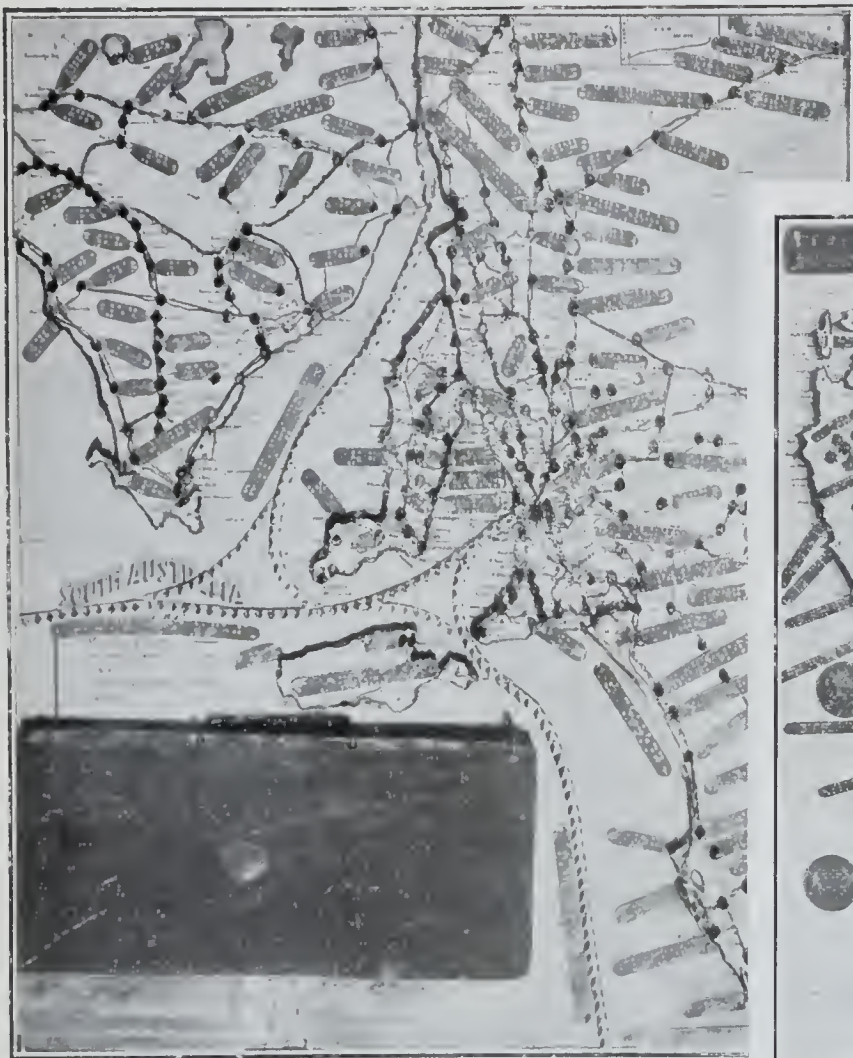
MAP OF BRISBANE STREETS (2 miles radius of G.P.O.) Revolves like a ballot box and shows river, parks, 3 bridges, ferries and about 300 principal buildings, also railways, tunnels and trams. The aluminium tablets give the levels of various parts of the city.

REVOLVING MAP.



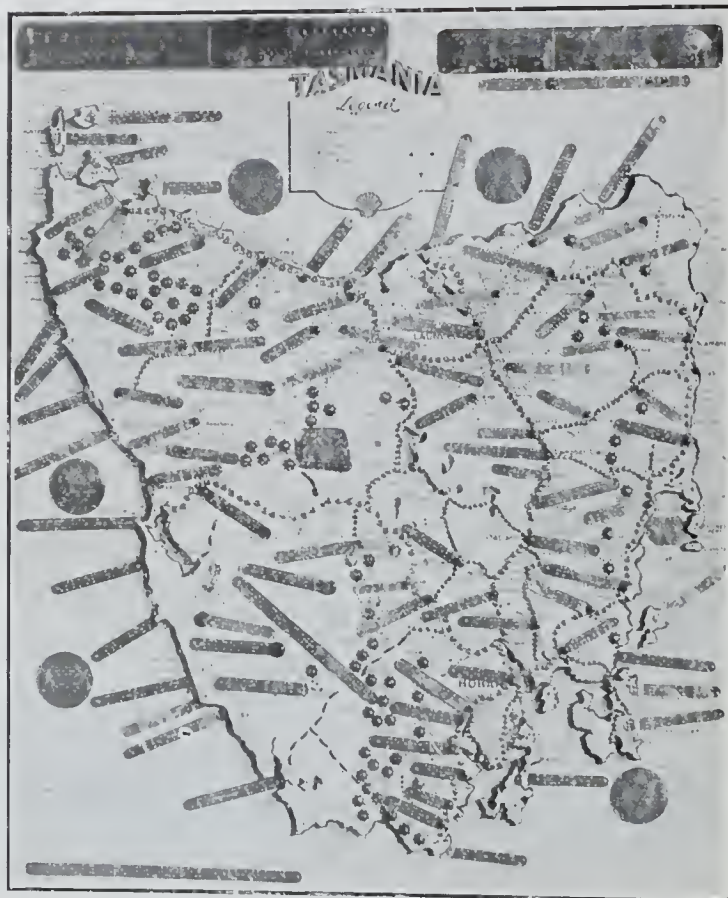
The Place Finder consists of numbers round the outside edges and an alphabet stick which runs up on a roller blind when released.

The property of the Club—for lending to School and Adult Societies.



WALL MAPS.

SIZE ABOUT 27 x 21 INCHES.



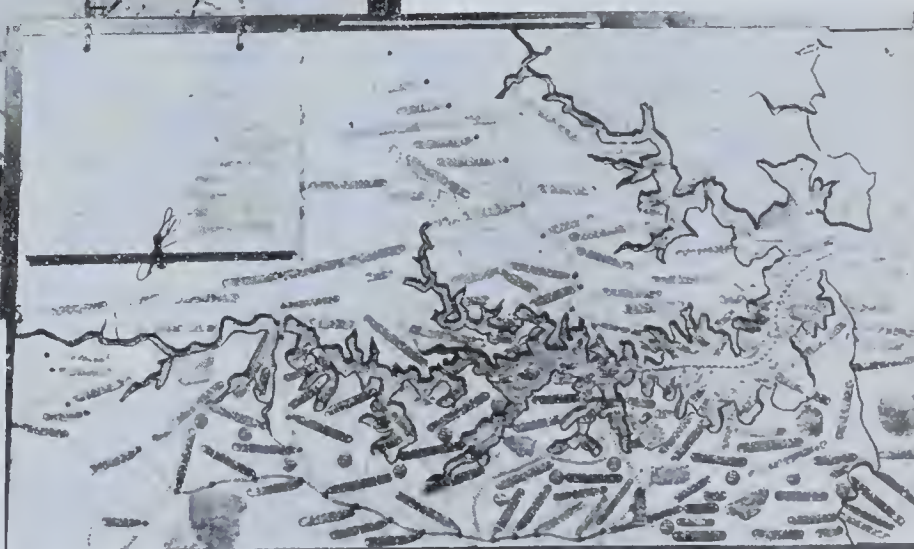
Sixteen of these Shell Road Maps have been presented to various Schools and Institutions for the Blind in Australia by the Shell Co. of Australia Ltd., who provided the maps and paid for the materials. Cutting out and mounting and Brailleing was undertaken by the voluntary help of the Club.

WALL MAPS.



This lady (Miss F. M. Pearson of New Zealand) made these two maps of New Zealand for the schools of her own Dominion. They were made without any proper facilities and without any tools other than a fret saw, hammer and punch. The only help given by our Club was advice and assistance with the place finders.

SYDNEY HARBOUR.—Showing all the bays and coves. As there is insufficient room for Braille name tabs for some of the places we use a number. The index on the left (3 sheets of aluminium brailled both sides) gives the name for each number. The hanging clock indicates the G.P.O., and the round discs show the mileage from G.P.O. The bridge will be seen at the end of shipping route.



Presented to N.S.W. School for the Blind, Sydney.

NEW ZEALAND INSTITUTE FOR THE BLIND.—"The Braille map has now come to hand. It is a nice piece of work, the instructions are quite easy to follow, and it will be most useful to our School equipment."

BRAILLED MAPS.



This is a close-up of Australia on the 3ft. globe. Made of diamond aluminium to make Australia Easy to find.



LARGE MAP OF AUSTRALIA, made by T. Usher and Brailled by F. Moorhead and V. Fulcher. Place-finding attachment by Queensland Braille Map and Model Club.

No school for the blind need be without maps. Map-makers are always willing to donate paper ones which are very suitable for mounting.

ROYAL VICTORIAN INSTITUTE.—"We are glad to add the map to our collection . . . something different."

ASSOCIATION FOR THE ADVANCEMENT OF THE BLIND, Melbourne.—"Please accept our grateful thanks . . . our members are delighted."

S.A. INSTITUTION FOR THE BLIND.—"Your excellent and fascinating maps have arrived and are a source of great interest, both to the blind pupils and the rest of us."

PUNCHING THE METAL TABS.

All the maps and articles shown in this book have been Brailled in the manner described on this page. The names of places or objects were Brailled on paper in the ordinary way on a Braille frame and laid face downward on a strip of aluminium $\frac{3}{8}$ inch wide.

A block of beech or other close-grained timber is used (end grain), and a fairly sharp punch tapped with a light hammer makes a perfect dot. The block is scraped or sanded off from time to time to avoid making irregular dots.

The aluminium 24 gauge is procurable from coach trimmers' supply houses in sheets of 6 x 3 feet. Any plumber will cut it into strips.

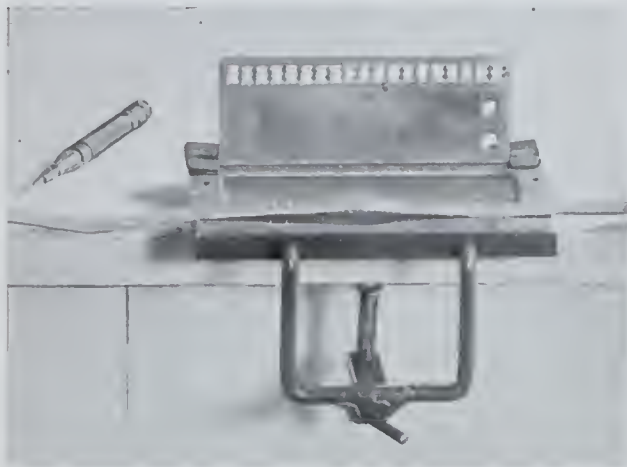


Braille Writing Societies or Schools or any blind person can write the Braille for persons wishing to make maps, so that it is not necessary for you to learn Braille.

Braille is, however, easy to learn and very little time would be needed to master the small amount necessary for making maps.

THE BRAILLERETTE shown elsewhere in this book is a new idea and was evolved after all the maps and models shown were finished.

THE BRAILLERETTE (Made in Brisbane).



OPENED TO RECEIVE METAL

This is the new Braillerette by which the metal tabs may be made. The Blind can use this apparatus as it is operated in the same way as an ordinary Braille frame except that a patent Spring Punch is used instead of a Stylus. This Braillerette is very strongly made on a steel base which can be screwed to the table. It has a chromium plated hinged brass which holds the metal firmly in position while being punched.

A light or heavy dot can be made as desired. The patent punch is Starrett's centre punch No. 18AA, procurable from most engineering supply houses.

Testimonial from N.S.W. School for the Blind:—

"The Braillerette is an excellent thing and the patent punch also excellent. Our children are very interested in them, and will, I am sure, get a lot of pleasure, as well as a lot of self-help . . ."



CLOSED DOWN READY TO PUNCH THE METAL.

All the tabs made on maps shown in this book were made by hand as on page 19, but the Braillerette has the advantage of enabling the blind to make tabs for their maps.

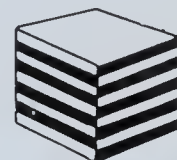
HOW TO MAKE A SOLID GLOBE.



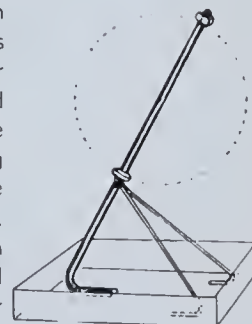
This 18 inch Globe has been presented to Sydney School.

Instructions.

Secure a block of softwood, 18 x 18 x 18 ins., either in one piece or laminated, and get it turned into a ball with a one inch hole right through. At the top and bottom of hole hollow out just sufficient to take the ball or roller bearing referred to in next paragraph.



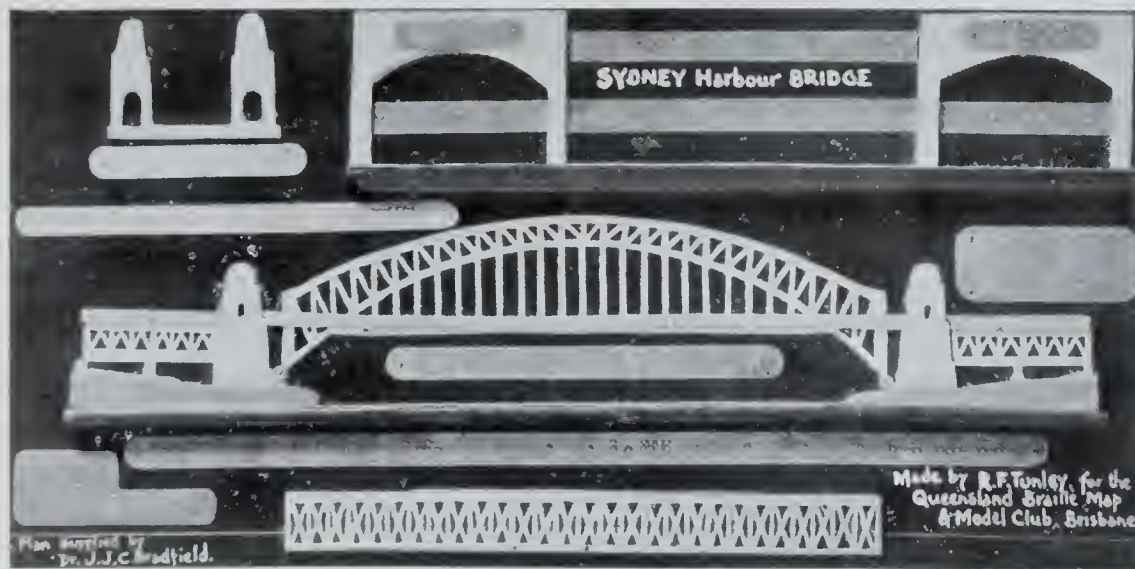
Make a shallow box with bottom 18 x 24 of 1 inch timber with sides 4 inches high. Get an old Ford car steering column and bend as shown. Bore a hole through at A for ball-bearing to rest on, and holes at the bottom to screw into box. Bend a piece of $\frac{3}{8}$ inch round iron to act as legs and nail into box. Two ball or roller bearings are slipped over the upright column, one for the top and one for the bottom. When upright is at the correct angle and legs in position pour in very wet sand and cement (equal quantities very well mixed before wetting) sufficient to make a solid base. It is a good idea to line the box before putting in the concrete, but not imperative. A lid can then be nailed on the top of the box, and wheels or rollers provided.



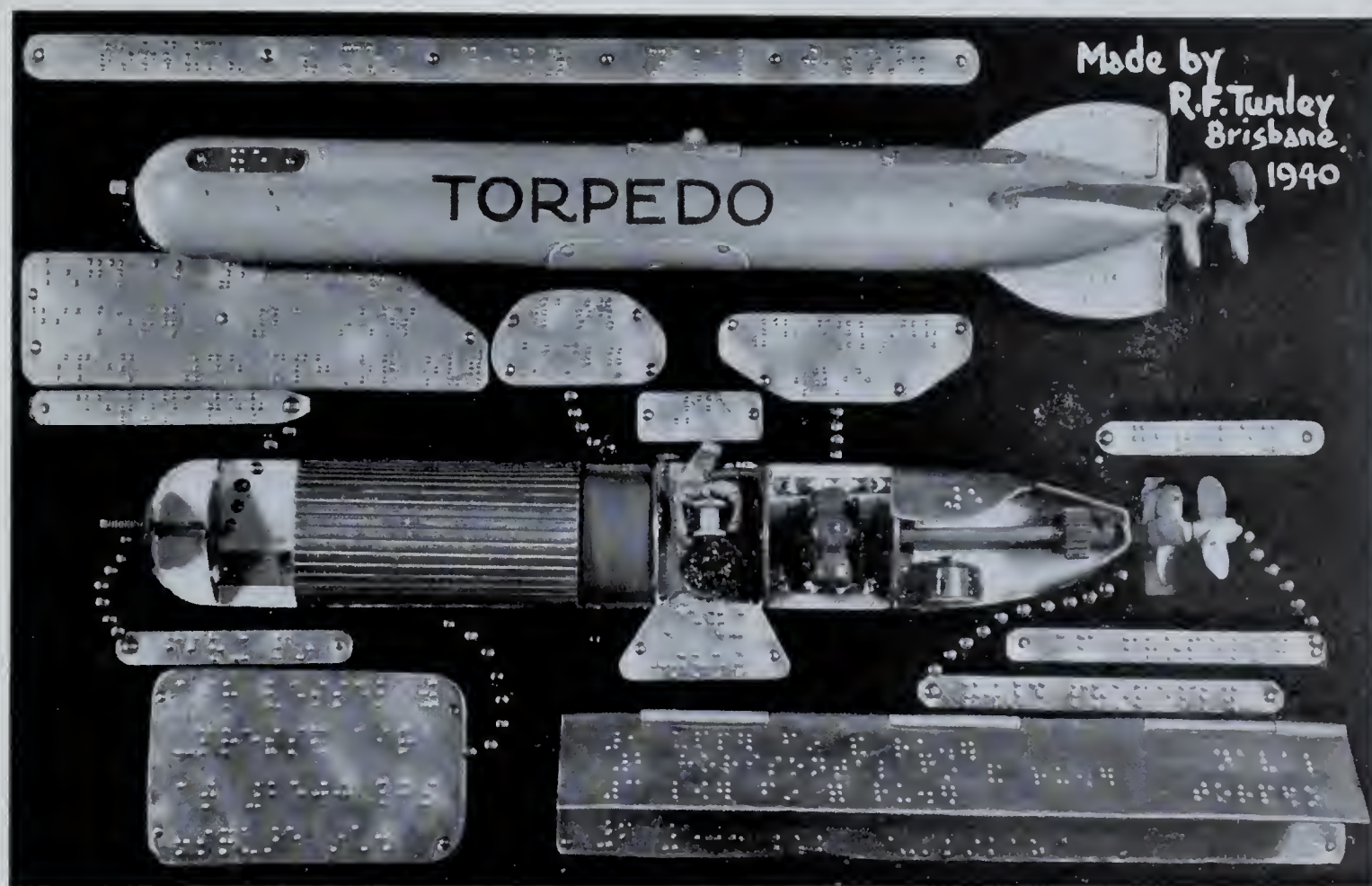
MAP AND MODEL MAKING



is a fascinating hobby and is of inestimable value to the blind. Aluminium is very easy to work and when once made will last for all time. All that is needed is to paste the map or a tracing or sketch of one, or a picture on to a piece of aluminium, and on a solid block of hardwood (end grain) and chop it all out with ordinary carpenter's chisels, and a $\frac{1}{4}$ inch gouge. When chopping out the design do not take out much at a time. Cut out the middle of each opening and gradually chop out to the coast or finishing line.



In the above map of Europe it will be seen that escutcheon pins have been knocked in all round the coast and boundaries, which gives the map a quilted appearance. The lino. under the top plain aluminium enables this effect to be obtained.



HOW TO MAKE A TORPEDO.

This model torpedo is about 15in. x 10in., and is made on a piece of 3-ply wood. The shape is shown by the piece of turned wood. The lower part shows the internal parts. The firing pins and starting triggers have springs, and the engine which is made of meccano parts turns, as also do the propellers. On all parts are tabs with names or numbers. A key to the numbers is on the hinged flap at the bottom. This and other models are fitted into neat posting boxes and go free by post to all the Australian Schools for the blind.

LOUIS BRAILLE



the inventor of the type used for the Blind, was born in France in the year 1809. He was the son of a saddler, and he often watched his father using his tools, with the result that, when he was three years of age, he tried to imitate his father at work; the awl slipped and destroyed the sight of one eye, and soon after the sight of the other went. At ten years of age he entered the Blind School in Paris, where, after a successful career as pupil he was (in 1826) appointed a professor. He was also an organist in various churches in Paris. While still a pupil at the institution, he conceived his great invention that has proved such a great benefit and pleasure to the Blind throughout the world—the system of writing by raised dots. The simplicity of this system permits of its being used even by the least gifted, and, thanks to this invention, the Blind can now write from dictation or correspond either with each other or with sighted people who understand the method.

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Photos by A. McLeod

Drawings by Ian Kilner

Blocks by S. A. Best Ltd.

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Our thanks are due to the following:—

To the Postmaster-General for Free Postage on Maps and Models.

To Macdonald Hamilton & Co. Ltd. for Free Conveyance by steamer.

For assistance in producing this book to Fox Movietone Gazette, Cinesound Review, “Pix.”

And for financial assistance, to Mrs. T. J. Rothwell, 4BK, Courier-Mail Radio Station, and Listeners-in, and Blind Institutions of Sydney, Brisbane, Hobart, Perth, Adelaide, Melbourne, and many others.

The Ideas of a Blind Friend.

Some days ago I was shown a model of that ingenious, but ghastly naval weapon, the Torpedo. This model was constructed in two separate sections; one showing the exterior appearance, and the other setting forth in detail the inner mechanism, the whole mounted upon a stand and explained by braille notes written against each section. To the blind people the model will afford a clear understanding which could be given them in no other way.

This is but one instance of the manifold productions for presenting to the Blind a clear conception of those articles, buildings and other devices which have become so much part of present day existence, whose designs are so common to the ordinary individual, yet, without such medium, must remain but a hazy, and perhaps at times, even erroneous concept.

Nothing is more familiar to one moving through a modern city than the traffic direction lights; but to the blind person they must remain somewhat obscure as to design and appearance, but for the recently constructed model.

This scheme had its beginnings some years ago in the production of Maps of countries, states, and later separate towns, culminating some two years ago in the construction of a map of the world, showing boundaries, trade routes, date line, etc., the whole simplified by an indexing system, enabling the student of geography to locate quickly any desired town, sea or other geographical position. In the very limited space at my disposal it is impossible to set forth the inestimable advantages gained by the blind from the many and varied productions.

H.C.D.

The sole object of this book is to show how you can brighten the lives of your local blind by helping them to "see" by models and maps.

Please read over again the article inside the front cover and then make up your mind to form a Club of your own to make things for your own School. They are easy to make and very little expense need be incurred.

Any further particulars you may need will be cheerfully sent if you will write to—

THE QUEENSLAND BRAILLE MAP AND MODEL CLUB.

103 Wickham St., Valley, Brisbane.

We should welcome correspondence and annual reports from all countries.